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**Integrating the Clean Water Act and Endangered Species Act:
Analysis, Commitments and Recommendations for Aligning
Total Maximum Daily Loads and Habitat Conservation Plans**

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EXECUTIVE SUMMARY
Integrating the Clean Water Act and Endangered Species Act

- ❑ The regional offices of the Environmental Protection Agency, National Marine Fisheries Service, and U.S. Fish and Wildlife Service are preparing guidance for private landowners and state and local government on the integration of the Clean Water Act (CWA) and Endangered Species Act (ESA). The attached draft guidance explains how ESA Habitat Conservation Plans (HCPs) and CWA Total Maximum Daily Load (TMDL) analyses can be integrated.
- ❑ The listing of salmonids under ESA and the growing list of impaired water bodies under the CWA makes integration an imperative. The goals of the CWA and ESA are generally compatible and complementary. Yet local jurisdictions and landowners have concerns about the potential for “double jeopardy” under the CWA and the ESA and uncertainty about integrating the procedural and technical aspects of the two Acts. The cooperating federal agencies are committed to integrate the two Acts.
- ❑ Landowners whose land contains impaired waters under the CWA and affects species listed under the ESA, may want to simultaneously prepare a TMDL and an HCP. These two regulatory tools may offer the landowner the greatest assurance of compliance with these two laws.
- ❑ While there are similarities between HCPs and TMDLs, this guidance also addresses some of the differences:
 - Scale (watershed, basin, segment etc.)
 - Ownership (public, private, mixed ownership)
 - Deadlines for completion (HCPs are voluntary, TMDLs are not)
 - Public review processes (state and federal comment periods and public involvement)
 - Functional scope (single species, multiple species etc.)
 - Measurement of success (meeting water quality standards versus habitat functions)
 - Assurances (HCPs have a longer term than TMDLs)
 - Implementation plan (required under HCPs)
- ❑ The cooperating federal agencies request that landowners and tribal, state and local governments review and comment on this draft so that the document will better reflect both the needs and experiences of users. In addition to seeking comments, the cooperating federal agencies intend to learn from pilot projects which are attempting to integrate HCP/TMDL development and expect to revise this draft document in light of that experience.

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I. Purpose of this Paper

The Regional Directors of the National Marine Fisheries Service (NMFS), Environmental Protection Agency (EPA), the U.S. Fish and Wildlife Service (FWS) in the Pacific Northwest have agreed that their agencies will coordinate and collaborate on responsibilities for implementing the Endangered Species Act (ESA) and Clean Water Act (CWA) for the benefit of the environment and the public.

Goals of integrating the two laws are:

1. Strengthen the effectiveness of both laws and all agencies by working together to maintain, protect and restore fisheries and streams and achieve watershed recovery in the Region. Each law has areas of strengths and weaknesses - by combining two laws, a more comprehensive approach is possible.
2. Provide an opportunity for “one stop shopping” to the public, including private landowners such as timber companies and ranchers, state agencies such as highway departments, and local governments where the need to meet CWA requirements and ESA requirements overlaps.
3. Make efficient use of all agencies’ resources (state and Federal) through partnerships between water quality and fisheries/resource management agencies and the public.

These goals can be accomplished through the implementation of discretionary authority and flexibility afforded these agencies by existing Federal statutes. While integration of these programs is not a requirement, it is an opportunity with many benefits which the agencies encourage and fully support.

To demonstrate support of this effort, the Regional Directors have adopted the following Regional policy statement:

It is the policy of the Northwest Region of the National Marine Fisheries Service, Region 10 of Environmental Protection Agency, and Region 1 of the Fish and Wildlife Service, to integrate the procedural and technical aspects of the Clean Water Act and Endangered Species Act to try to ensure that efforts taken to improve water quality will be sufficient to restore salmon and other listed species.

The Regional Directors formed interagency teams to lead specific aspects of the integration effort. This paper was prepared by an interagency review team comprised of staff and managers from NMFS, EPA, and FWS.

The purpose of this paper is to identify and recommend next steps for policy and procedural issues related to integration of the ESA and the CWA, with particular focus on

integration of Habitat Conservation Plans (HCPs) [Section 10 permits] developed under ESA and Total Maximum Daily Loads (TMDLs) developed under the CWA. This document is intended to provide initial guidance to Federal agency field staff, States, Tribes, local governments and other stakeholders on steps which may be taken to advance integrated efforts.

We also intend this paper to create a dialog with non-Federal partners. While it is essential for the Federal agencies to demonstrate how integration is possible and how Federal agencies will align themselves to do business together, these efforts will not succeed without collaboration from multiple parties. Due to their lead role in developing TMDLs, states and tribes will play a key role in deciding whether and how they want to integrate these two laws. For example, this guidance can be used by states to develop documents like Water Quality Management Plans, which incorporate the elements of HCPs and TMDLs.

Similarly, because the development of HCPs is voluntary, private parties, cities and counties and other possible HCP/Section 10 permit holders must demonstrate leadership to make integration successful. In addition, Federal land management agencies (Forest Service, Bureau of Land Management, and Bureau of Reclamation) may find recommendations in this paper useful for integrating Section 7 ESA requirements with TMDLs.

Concurrent with the preparation of this initial guidance, the three agencies are engaged in pilot efforts to integrate the ESA and CWA. Successful completion of these pilot efforts is essential and will inform the direction of future guidance. Pilot efforts are referred to throughout this paper to demonstrate the connections between the generic guidance and specific actions undertaken as part of a pilot. A summary of pilot efforts is provided in Table 1.

II. Opportunities for Clean Water Act/Endangered Species Act Integration

Table 2 summarizes some of the many legal connections and therefore, opportunities for CWA ESA integration. Some of these connections are well established and tested (e.g. ESA section 7 on Corps 404 permits). Other opportunities, such as aligning recovery planning with CWA non-point source program upgrades, or aligning watershed 4(d) rules with TMDLs remains to be explored. Depending on the specific situation, (e.g. urban or rural watershed, geographic scale of the action, permit type, inclusion of Federal and non-Federal lands etc.) the approach to integrating TMDLs and HCPs will need to be tailored to the given situation.

What is an HCP?

Under the ESA, if a non-Federal action will harass, harm pursue, hunt shoot, wound, kill, trap, or capture a Federally listed threatened or endangered species, then an incidental “take” permit is required. Harm may include significant habitat modifications that impair or adversely impacts a listed species. According to section 10(a)(2)(A) of the ESA, a conservation planning document, also known as a Habitat Conservation Plan is a mandatory component of an incidental take permit. The size and complexity of HCPs varies and may cover small to large areas and include all private activities (e.g., logging, ranching, residential or commercial development).

The Regional Directors and interagency regional team decided that two avenues of integration have the greatest likelihood of yielding significant benefits if pursued proactively: 1) Section 7 and Water Quality Standards, and 2) Section 10/HCPs and TMDLs. Section 7 consultations on State water quality standards are being undertaken through direct interaction with the States, Tribes, EPA, and the Services and the development of additional policy documents via an interagency Water Quality Standards team.

What is a TMDL?

Section 303(d) of the Clean Water Act requires states to list waters which do not meet water quality standards as impaired or threatened. States must then develop total maximum daily loads (TMDLs) for those pollutants and waters on the list. Litigation against EPA for failure of states to complete TMDLs has resulted in findings that EPA must establish TMDLs if the state fails to do so. A TMDL is a quantitative assessment of loading capacity for the pollutant and water body, including identification of sources (both point and nonpoint source), loading capacity including a margin of safety, and allocations of capacity to the various sources. States must also develop and submit an implementation plan for the TMDL. EPA is currently revising 303(d) regulations and guidance.

Many waters in the Pacific Northwest and Northern California are listed for physical factors which impair the survival and propagation of listed species, including sediment, temperature channel modification, and habitat modification. In addition, court cases in Idaho, Oregon, Washington and Northern California have established specific time frames and pacing requirements for completion of TMDLs.

This paper is intended to further efforts to integrate HCPs and TMDLs in a manner that meets both laws. The advantages of integrating the requirements of the ESA and CWA through a combined TMDL/HCP process are:

- TMDLs and HCPs contain the assessment and planning functions of the two laws.
- Both TMDLs and HCPs must contain elements that demonstrate that water quality (including physical measures) will be adequate for the survival/recovery of aquatic species through measures that are supported by sound technical analysis.
- Watershed analysis is hoped to be a major element of both plans.
- Monitoring and adaptive management is expected to be a major element of both plans.
- Combining the elements of both plans will ensure an effective plan is developed through an efficient process.
- TMDL/HCP can be targeted to achieve watershed scale recovery which coordinate and connect actions on Federal and non-Federal lands.

Commitments and Recommendations

#1 Whenever work on either a TMDL or an HCP is started, the Federal agencies commit to coordinate with each other, and to collectively evaluate with affected parties whether parallel work on the other law's plan/permit would be in the best interests of the environment, the public, and the affected entities. If the answer is yes, the agencies should actively take steps to integrate TMDLs and HCPs, as outlined in this paper.

- #2 The three agencies commit to respond to inquiries and suggestions from other stakeholders, including Federal agencies, States, Tribes, cities, counties, agricultural districts, and private landowners on approaches to integrate the CWA and ESA in addition to combining TMDLs and HCPs.

III. Combining HCPs and TMDLs

Identifying Common Elements

The interagency team explored how TMDLs and HCPs could be integrated based on watershed type. This integration approach, presented in Table 3, is one tool which may be helpful to Federal and non-Federal partners in preparing a combined TMDL/HCP document.

Simultaneous Development or Deferral?

One decision which should be made early in the process is whether the goal is simultaneous development of an HCP and a TMDL or, alternatively, deferral of one process contingent on completion and recognition of the other. If the goal is “certainty,” this will only be achieved through completion and approval of both processes by respective agencies. Therefore, most of the pilot efforts are based on the goal of simultaneous development.

Washington TFW Forestry Module

Washington TFW Forestry Module is unique in that ESA assurances and partial CWA assurances have been negotiated for a statewide set of approved timber practices. These practices have been negotiated through a multi-stakeholder process. Formal recognition by NMFS/FWS through a 4(d) rule or HCP would allow the Washington Department of Ecology to list TMDLs for forested watersheds as a low priority, and therefore defer development for several years while completing other high priority TMDLs.

The benefit of this approach is to promote quick implementation of improved practices for an entire sector without waiting for a watershed by watershed analysis. The limitation of this approach is that certainty is limited, practices may ultimately be found to be over protective or under protective for any given watershed, and some sector may carry a disproportionate burden during the deferred period. This approach also cannot be used for all sectors since states must complete TMDLs at an even pace.

One Document or Two?

A second early decision is whether to prepare one document (a combined TMDL/HCP) or two separate documents. While there are many common elements of TMDLs and HCPs (as identified in the combined checklist), the exact legal requirements, terminology, and processes are distinct. To the extent possible, each applicable agency (state and Federal) should make findings that conform to the specific law each implements.

Commitments and Recommendations

- #3 The agencies commit to further refine the draft combined checklist and recommend that states, tribes and other parties use this checklist to develop an initial work plan. This work plan should be reviewed and agreed to by all agencies before work proceeds.
- #4 The agencies recommend that TMDLs and HCPs be developed simultaneously (or sequentially without significant time between the two processes).
- #5 The agencies recommend that technical analysis be contained in appendices that can be attached to both the TMDL and HCP. Otherwise, the documents should be separate in order to meet the separate administrative process requirements of both laws. The separate documents should contain many similar elements (habitat goals, management measures, monitoring and adaptive management commitments, etc.) The agencies will use the pilots to further test ways to link the two documents and streamline documentation.

IV. Identifying and Resolving Critical Differences between TMDLs and HCPs

In order to integrate requirements of TMDLs and HCPs, an interagency team from NMFS, EPA, and FWS compared the requirements of both processes and identified critical differences. The team then proposed approaches for resolving these differences. Table 4 summarizes this analysis. The following section describes each of these differences, proposes resolution in more detail, and makes specific recommendations.

1. Plan Development and Scope

The interagency team identified four issues related to plan development and scope, those being who is the responsible party, geographic scope of the action, deadlines for document completion, and public review:

1.1 Responsible Party: The responsible party for TMDLs is the State water quality agency; for HCPs it is usually a private landowner or group of landowners representing a single type of land use activity. The implementation plan of the TMDL transfers responsibility for specific actions to individual landowners and/or sectors. For consistency and accountability, possible approaches are:

- State water quality agencies could submit an HCP or WQMP which conforms to the TMDL and implementation plan. The State agency then becomes the Section 10 permit holder and must be capable of enforcing permit conditions.
- Cities and counties could become HCP/Section 10 permit holders if their jurisdiction covers a major portion of the watershed(s) on the 303(d) list and management measures in the HCP rely on authorities of local governments (e.g. land use planning, grading and construction ordinances, road maintenance, sewage treatment, etc.)
- Conservation districts in agricultural areas could develop HCPs.

- Utilities/water districts may want to develop HCPs where water management is a key concern.
- The Services should work with any interested parties to further refine issues and explain legal responsibilities of becoming the lead (Section 10) permit holder.

1.2 Geographic Scope: Reconciling the geographic scale of TMDLs, which are based on water body segments or watersheds, and HCPs which are usually based on land ownerships, is a key issue. Defining geographic scope is critical to the success of TMDL/HCP integration because integration ensures that all lands within a watershed, not just non-Federal lands will be covered by whatever product is developed. This will likely require being innovative in developing policy that connects restoration actions on Federal and non-Federal lands.

In order to be effectively integrated, both HCPs and TMDLs must contain watershed scale assessments and individual landowner or sector operating plans containing management measures based on these assessments. This work is usually challenging given that scientific information is limited, effectiveness of proposed management measures is uncertain, and the work must be completed under tight time frames.

For HCPs developed on an individual landowner basis, there are several options for reconciling the scale issue:

- An HCP for a single landowner can assess the loading capacity of the larger watershed (with State water quality agency oversight and review), even though land management prescriptions (and therefore assurances) will only apply to one landowner. In this case, the state agency must write and implement a generic land management plan for other owners in the watershed.
- If the TMDL is completed before the HCP, and the individual ownership covers only a portion of the watershed, HCPs can be written for individual parcels within the watershed (taking the TMDL analysis and targets into account). The HCP becomes a portion of the TMDL implementation plan.
- A TMDL may be written for a partial watershed as long as that sub-watershed or segment is a hydrologically meaningful unit.
- If an HCP is completed before the TMDL and is proposed to be used as the TMDL, the TMDL can cover the water body segment(s) described in the HCP. A caveat should be included in the HCP that a watershed scale TMDL needs to be completed at a future date. At that time, if the measures in the HCP are proven effective, they can be incorporated into the watershed level TMDL implementation plan, subject to monitoring and adaptive management.

In the last alternative, some type of “reopener” statement may be necessary and/or adaptive management process should be established to allow for allocations and actions to be reassessed when the larger watershed TMDL is completed at a later date. This is an unresolved issue which will be tracked through the pilot projects.

If conservation districts, cities, counties, or state water quality agencies become permit holders, HCPs can more easily be designed to overlay with watershed boundaries which match the TMDL.

Simpson Timber Co. HCP/TMDL

Simpson Timber Company is proposing an integrated land management plan to address the conservation needs of aquatic dependent fish and wildlife, maintain water quality, basin hydrology and channel integrity, and allow continuation of timber harvesting on a portion of their ownership in Western Washington. The plan relies on a broad stratification of the landscape into five lithotopo units, followed by a second order stratification of delineated stream segments within each lithotopo unit. Because the HCP is based on watershed scale analysis and land management practices, the TMDL, which requires additional quantitative analysis of stream characteristics, can be readily integrated. The TMDL will rely on the implementation practices in the HCP for TMDL implementation. Status: pending public notice.

1.3 Deadlines for Completion: State schedules for completion of TMDLs are set by a combination of their 303(d) list priority ranking and court consent decrees. Thus, the pace of development and order of watersheds to be addressed is usually very specific and inflexible. Approaches which should be explored to align schedules of TMDLs and HCPs include:

- The Federal agencies should target outreach and technical assistance for developing HCPs to watersheds scheduled for TMDL development. ESA listings should be used to prioritize which TMDLs the Services will provide input.
- States that wish to take a leadership role in integrating the two laws may develop a schedule for HCP development, with appropriate responsible parties who are willing to step forward, which conforms to their schedule for TMDL development.

If it is not possible or advantageous to align schedules of TMDLs and HCPs, the adaptive management process may be another option for schedule alignment once the HCP is final.

1.4 Public Review: Both HCPs and TMDLs require public review. HCPs must conform to public review procedures in the National Environmental Policy Act (NEPA). Depending on such factors as the potential significant impact to the environment and/or geographic scope of the action, an Environmental Assessment or an Environmental Impact Statement may be required as part of the HCP development process. In either of these cases, the proposed HCP and Incidental Take Permit are made available for public review and comment. It is also important to note that low-effect HCPs may be categorically excluded from NEPA documentation requirements. Low-effect HCPs have: 1) minor or negligible effects on federally listed, proposed, or candidate species and their habitats covered under the HCP, and 2) minor or negligible effects on other environmental values or resources. Low-effect HCPs are, however, made available for public review and comment before the Services issues permits.

The TMDL public review process is not required to conform to NEPA. Federal regulations require public notice of the proposed action and a public comment period. These regulations are fairly flexible and states usually determine the exact public review process in

conformance with additional state requirements. When preparing a joint HCP and TMDL, the parties should determine whether it would be most efficient and in the public's interest to combine the public review process through joint notices, concurrent comment periods, joint hearings, and joint responses to public comment. Finally, it is also important to point out that the Services' HCP program has successfully integrated the State SEPA requirements for California and Washington with Federal NEPA requirements.

Commitments and Recommendations

- #6** State agencies and Tribes should consider becoming permit holders for HCPs. This would allow the State or Tribe to be the responsible party for both the TMDL and the HCP. Cities, counties, conservation districts, or utilities may also be permit holders, with the assistance of the State. The appropriateness of the permit holder depends in large part on who has jurisdiction to affect the specific management measures which are most important for restoring aquatic species in the particular watershed.
- #7** HCP development should be encouraged, especially in watersheds scheduled for TMDL development. The schedule for TMDLs may be due to court consent decrees and/or state agency priority lists.
- #8** Ideally HCPs and TMDLs are initiated together. However, either can be added onto the other if one is preexisting.
- #9** HCPs and TMDLs should be done on a watershed scale, where appropriate. For HCPs done on an individual landowner basis, there are three ways to reconcile the scale issue: 1) An HCP can assess the loading capacity of the larger watershed, even though land management prescriptions (and therefore assurances) will only apply to one landowner. In this case, the state agency should write and implement a generic land management plan for other owners in the watershed. 2) If the TMDL is completed before the HCP, HCPs can be written for individual parcels within the watershed. The HCP then becomes the TMDL implementation plan. 3) If the HCP is written first, TMDLs can be written for those portions of the watershed they impact, with an additional reopener clause for completion of the full watershed TMDL at a later date.
- #10** Public review is necessary for both a TMDL and an HCP. Combined public review periods would facilitate public understanding of the process and ensure that agencies confer with each other about changes made in response to public comment.

2. Objectives

The interagency team identified four issues related to aligning the objectives of HCPs and TMDLs:

2.1 Functional Scope: HCPs address habitat of listed species, and may cover single species, multiple species and/or multiple habitats. In contrast, TMDLs address specific waterbodies or watersheds and may cover single or multiple pollutants or affected habitat parameters. Aligning the two efforts will mean that both species/habitat needs and pollutant reduction commitments will need to be explicitly addressed.

2.2 Overall Goal: The overall goal of an HCP is recovery of essential habitat functions and long-term survival of Federally listed species. Applicants for HCPs are encouraged to develop a plan that produces a net positive effect for the species and contributes to recovery plan objectives. The overall goal of a TMDL is the attainment of water quality standards. These goals support each other. In fact, water quality standards contain designated uses which may directly refer to protection of aquatic species. A combined HCP/TMDL can and must define goals which satisfy both purposes.

2.3 Standards: A state's water quality standards contain either narrative or both narrative and numeric water quality criteria. A TMDL must demonstrate through proper monitoring (implementation, effectiveness, and validation) that these criteria will be attained if the TMDL is implemented. Similarly, NMFS uses Properly Functioning Condition Criteria indicators for habitat. These indicators are not usually included in HCPs, but rather become the review criteria for approving HCPs.

2.4 Protection of High Quality/Pristine Areas: An HCP may contain specific provisions to protect pristine areas as part of the mitigation for take. For aquatics HCPs, set asides are often been made for streamside buffers. Antidegradation provisions within the Clean Water Act regulations require states to protect high quality waters. States may choose to comply with antidegradation provisions of the water quality standards during development of TMDLs, i.e. where a larger watershed is listed as impaired but specific segments may be high quality, the TMDL could further clarify how the high quality reaches will be maintained and protected. None of the EPA Region 10 states are practicing this approach to antidegradation at this time.

South Steens, Oregon Conservation Agreement/TMDL

In 1997, FWS, BLM and Oregon Dept of Fish and Wildlife and the privately owned Roaring Springs Ranch entered into a voluntary Conservation Agreement (pre-listing agreement under ESA) to improve riparian and stream habitat conditions across a mix of private and Federal lands. This agreement served as the basis for a draft TMDL for temperature and sediment which was developed subsequently by Oregon DEQ and EPA. Building off of the Agreement, the TMDL used surrogates for "daily load" allocations. Specifically, the TMDL used "view to sky" (the inverse of shade) and "active eroding stream bank," These surrogate measures can be linked to specific source areas, and thus, to management actions needed to solve problems which cause water temperature increases. Status: pending

Commitments and Recommendations

- #11 Parties developing an integrated TMDL/HCP should develop a single set of habitat indicators (e.g., NMFS matrix of pathways and indicators) which the plan will be designed to meet. The indicators should represent both properly functioning conditions for listed species, and quantitative interpretations of water quality standards, where standards are narrative, which will form the basis of the TMDL.
- #12 TMDLs may include habitat measures as surrogates for “loads.” Habitat surrogates are more closely aligned with conditions for the recovery of aquatic species and may be more useful measures for land managers to follow as they select best management practices.
- #13 Where a plan is being developed for a larger watershed, and portions of that watershed are pristine or serve as refugia for aquatic species (even though the entire watershed is on the 303(d) list), the TMDL/HCP should clearly delineate those areas and ensure that water quality and habitat are not degraded. Since pristine and refugia habitats are sometimes located on Federal lands, those areas, when appropriate, should be included in the TMDL/HCP plan.
- #14 The three agencies commit to developing a common set or sets of habitat parameters that can be used for both TMDLs and HCPs to meet the requirements of the CWA and ESA. While the habitat parameters should be the same, the standards to be reached may vary depending ecoregion and/or local conditions. Temperature issues will be addressed specifically through a joint technical committee comprised of EPA and State agency staff scientists. The agencies will use a peer review process in developing this common set of indicators.

3. Assurances

The issue of what assurances are provided through HCPs and TMDLs is central to the discussion of how to integrate these two programs. The interagency team identified three issues related to assurances: assurance of plan effectiveness, certainty to the regulated party, and time frame of the plans.

3.1 Assurance of Effectiveness: Both HCPs and TMDLs incorporate provisions designed to ensure that the plans are effective at meeting their objectives. Federal regulations require that TMDLs include a “margin of safety” to account for uncertainty and to ensure that water quality standards are attained. ESA contains no equivalent regulatory approach; however, in practice aquatic species HCPs may include adaptive management procedures that require reevaluation of effectiveness of management measures over the life of the permit.

A margin of safety may take several different forms. One means of aligning HCPs and TMDLs is to express the margin of safety as the adaptive management process linked to strong resource standards and objectives supported by a strong monitoring program. Margins of safety can also be expressed as the unquantified margin that results from the sum of conservative assumptions embedded in the TMDL; these assumptions would presumably be identical to those in the HCP.

3.2 Indemnity from Enforcement/Certainty: A major motivating force behind developing HCPs is protection from potential enforcement actions, especially those which may be brought by third parties. The overall regulatory scheme is to hold the regulated party to the specific provisions of the HCP rather than ambient conditions. HCPs provide a clear level of indemnity from ESA enforcement actions.

The Services have established a “No Surprises” regulation for HCPs to address the need to maintain regulatory assurances and provide regulatory certainty in exchange for conservation commitments from the HCP permittee. The “No Surprises” regulation sets forth a clear commitment by the Services that they will not require the permittee to provide more mitigation than was agreed upon in an approved HCP, except in certain clearly defined circumstances, provided the permittee is, in good faith, implementing the terms and conditions of the HCP.

The “No Surprises” regulation provides certainty for private landowners in ESA Habitat Conservation Planning through: 1) General Assurances- the No Surprises assurances apply only to incidental take permits issued in accordance with the requirements of the Services’ regulations where the conservation plan is being properly implemented, and apply only to species adequately covered by the conservation plan. 2) Changed Circumstances provided for in the plan- If additional conservation and mitigation measures are deemed necessary to respond to changes in circumstances that were provided for in the plan’s operating conservation program, the permittee will be expected to implement the additional measures specified in the plan. 3) Changed Circumstances not provided for in the plan- If additional conservation and mitigation measures are deemed necessary to respond to changed circumstances that were NOT provided for in the plan’s operating conservation program, the Services will not require any conservation and mitigation measures in addition to those provided for in the plan without the consent of the permittee, provided the plan is being properly implemented. 4) Unforeseen circumstances- In negotiating unforeseen circumstances, the Services will not require, without the consent of the permittee, the commitment of additional land, water or financial compensation or additional restrictions on the use of the land, water, including quantity and timing of delivery, or other natural resource beyond the level otherwise agreed upon for the species covered by the conservation plan.

For TMDLs which include point source allocations, certainty of implementation is provided through the NPDES permit provisions which conform to these allocations. Compliance schedules (which specify specific reduction levels and time frames) may be included in permits and provide the permittee with some protection from third party lawsuits under the CWA while the TMDL is being implemented. EPA cannot provide this certainty for non-point source TMDLs since regulatory authorities in the CWA and regulations are limited. States may be able to provide further certainty under state law if they have permitting and enforcement provisions for non-point sources. Further work is needed in this area to set appropriate expectations. EPA and the states may further explore “assurances” language for non-point source TMDLs which is appropriate to the CWA.

3.3 Time frame: Neither TMDLs nor HCPs have time frames which are specified in regulation or policy. Thus, all agencies have wide discretion to establish time frames which are realistic for recovery of the natural system and provide long term assurance for the regulated community. In practice, TMDL and HCP time frames may be very different. HCPs contain variable time frames with some timber HCPs having a duration of fifty or more years.

The CWA contains no requirements to review and reestablish TMDLs once they are established. This is left to the discretion of the state. In practice, states are beginning to make commitments to review TMDLs every three to five years, acknowledging the uncertainty contained in TMDLs. This three to five year timeframe should be aligned with adaptive management cycle within the HCP, if one exists

TMDLs may contain long-term implementation plans. Generally, the time frame for implementation should be appropriate to the specific scope of the problem. Thus, an implementation plan for a river impaired by excess sediment loads and channel structure modifications may span forty or fifty years for water quality standards to be attained. Generally, implementation actions should be aggressively pursued in early years of the plan followed by aggressively pursued monitoring for the duration of the plan.

Potential differences between TMDL and HCP time frames can be resolved through two steps: 1) If adaptive management is included in the HCP, then the document should specify how those cycles will conform to the shorter cycle for review/reissuance of TMDLs; and 2) TMDL implementation plans with monitoring and associated time lines should specify the longer time frame that is actually needed for the system to recover and standards to be attained. This longer time frame can be acknowledged even though the TMDL may be revisited on a shorter cycle.

Garcia River, California TMDL

The Garcia River in Northern California was selected by the North Coast Water Board and EPA as the first forested watershed for TMDL completion. Three timber companies own land in the watershed; two of these companies have begun HCP negotiations for their ownerships. The watershed also contains ranching and in-stream gravel mining operations. In March 1998, the Water Board adopted the TMDL with an implementation plan which gives landowners three options: 1) all discharge of sediment is prohibited - i.e. any discharge of sediment may lead to enforcement actions, 2) follow a generic set of land management prescriptions (including stream buffers, road maintenance, etc.) or 3) develop a site-specific, landowner sediment reduction plan. The generic prescriptions laid out fifteen years of different management measures with specific milestones. The plan estimated that if this aggressive implementation regime were followed, water quality standards would be met in forty years. Timber companies now have the option of integrating draft HCPs with this TMDL by submitting them to the Water Board as site-specific sediment reduction plans (option 3).

Commitments and Recommendations

- #15** Adaptive management is not a required component of either an HCP or a TMDL, yet both plans can use adaptive management in order to account for scientific uncertainty. To the extent feasible, the three agencies will approve adaptive management practices and procedures in appropriate TMDLs and HCPs. The agencies will develop further guidance as needed on specific elements of adaptive management which can be used for either plan.
- #16** The three agencies recommend that state agencies also commit to include adaptive management in the TMDLs and implementation plan, and seek to coordinate review cycles and processes with HCPs in the watershed.
- #17** Adaptive management cycles for combined TMDLs and HCPs should be coordinated to the extent practical. Parties negotiating a combined TMDL/HCP should decide specific review intervals that evaluate whether management actions have been correctly implemented, evaluate hillslope and in-stream data to assess whether the plans are working as designed, and modify management measures if necessary. Both TMDLs and HCPs may establish long-term implementation plans with shorter term review cycles. These shorter term cycles may vary among plans and states but will generally be on the order of 3, 5 or 10.
- #18** A coordinated monitoring plan is an essential element of adaptive management and should be included in a combined TMDL/HCP. The plan should specify implementation monitoring and effectiveness monitoring protocols, and must demonstrate the funding mechanism for monitoring is plausible.
- #19** Side bars for adaptive management should be negotiated jointly with all affected parties and agencies. Point sources would be guided by NPDES regulations pertaining to permit modification. These side bars may specify limits within which the management measures may change, who will participate in reviewing effectiveness of management measures, where does the burden of proof lie in recommending changes to original measures, etc.
- #20** EPA and the states will further explore what assurances can be provided to non-point source dischargers through TMDLs and implementation plans.

4. Implementation

The interagency team identified three issues related to implementation: 1) development of the implementation plan, 2) minimum elements of an adequate implementation plan, and 3) whether generic management measures can form that basis of the plan.

4.1 Implementation Plan: Implementation measures are integral to an HCP. The HCP typically contains very specific management practices for allowed activities. Current TMDL regulations do not require that TMDLs contain implementation plans; however, states do have responsibility for preparing implementation plans for TMDLs. This has two consequences: 1) there may be a time lag between preparation of the TMDL and the implementation plan and, 2) the TMDL and implementation plan may be adopted through separate processes depending on state law and

direction. States maintain the option of developing and adopting implementation plans and TMDLs together; however, this preferred approach may be constrained by limited resources and court driven deadlines to adopt TMDLs. The new TMDL regulations may address these implementation plan issues.

4.2 Adequacy of Plan: A key issue for both HCPs and TMDLs is what criteria will be used to judge the adequacy of the implementation measures. For HCPs, the plan must comply with ESA section 10 regulations at FR 222.22 (b)(5)(i-v). HCP applicants should also be aware that for HCPs, Section 10 issuance criteria includes the following: 1) The taking will be incidental; 2) The applicant will, to the maximum extent practicable, minimize and mitigate the impacts of such taking; 3) The applicant will ensure that adequate funding for the HCP and procedures to deal with unforeseen circumstances will be provided; 4) The taking will not appreciably reduce the likelihood of survival and recovery of the species in the wild; and 5) The Services have also looked for other assurances such as the applicants authority and ability to implement the terms of the HCP.

Under current TMDL regulations, the implementation plan must contain measures/actions that demonstrate “reasonable assurance” that water quality standards will be attained. This test applies to both point sources and non-point sources. This policy was articulated in an August 8, 1997 memo from the EPA Assistant Administrator for Water. States maintain some discretion in defining reasonable assurance, and may want to align the elements of a TMDL implementation plan with that for an HCP. Because the proposed new TMDL regulations likely will clarify required elements of a TMDL implementation plan, these regulations should be evaluated carefully.

4.3 Generic Management Measures: The agricultural sector and other sectors frequently ask what generic set of management measures will be adequate to implement TMDLs or to meet the Endangered Species Act. In theory, because TMDLs rely on watershed assessments, management measures should be designed individually for each watershed. In practice, there is a wealth of information on effective management measures, and each TMDL writer should not re-invent the wheel in devising management measures. State programs developed to meet the Coastal Zone Act Reauthorization Amendments (6217) contain management measures for many sectors that will, if implemented, improve water quality. These management measures may not be sufficient to attain water quality in all watersheds, nor to meet the requirements of any HCP developed in the watershed.

States may wish to consider a two stage process to set appropriate expectations on the adequacy of generic management measures. In stage one, the State may wish to promote implementation of management measures contained in the CZARA program (or additional management measures) for the entire sector, and provide some limited assurances if landowners follow these measures. This review of generic management measures should also be coordinated with the NRCS/FWS/NMFS MOU that commits the agencies to reviewing and consulting under Section 7 on Field Office Technical Guides. In stage two, as the state cycles through watersheds according to its TMDL schedule, it supports these management measures as implementing that specific TMDL and/or adopts any additional, watershed specific management measures that may be necessary. An HCP may be developed on a statewide basis for each sector which mirrors this

two stage process. The three Federal agencies would be happy to assist in further developing this process with interested states.

Commitments and Recommendations

- #21 In order to meet the requirements of both HCPs and TMDLs, implementation plans should contain: a description of control measures and actions, a time line which includes interim milestones including dates by which NPDES permits will be reissued, a discussion of what reasonable assurance there is that measures will be implemented, what legal authorities may/will be used to implement, an estimate of the time needed to attain water quality standards/properly functioning conditions, and a monitoring plan and adaptive management process which clearly explains how measures will be modified if milestones are not met or practices are not effective, and a demonstration of adequate funding to implement the plan.
- #22 For the agricultural sector (and potentially for other sectors), the three agencies recommend that States promote implementation of CZARA management measures and practices in the NRCS Field Office Technical Guide which are reviewed through the NRCS/NMFS/FWS MOU, even though these measures may not be fully adequate for TMDL implementation or for an HCP.
- #23 The three agencies commit to further discussion with interested states on a two stage process which merges a sector-wide management practices approach with a watershed specific approach.
- #24 The checklist for an integrated TMDL/HCP implementation plan should be revisited when TMDL regulations are revised.

V. Interagency Review

The interagency team recognizes that in order to achieve integration of TMDLs and HCPs, the agencies must establish a coordinated interagency review procedure to assist states, tribes, other Federal entities and private parties. The team identified a number of options; these options are not mutually exclusive:

1. Interagency review teams could be formed for each state and tribe, depending on the desire of state and tribal governments. States/tribes should initiate development of these teams. These state/tribal teams would allow the water quality, agricultural and forestry agencies, which are the lead for TMDLs, to sit at the same table with NMFS and EPA . HCP applicants, watershed councils, etc. could meet regularly with this standing review group to receive guidance and feedback on specific integrated plans.
2. For any given planning effort, the three agencies could designate one lead person who would be accountable for ensuring the three agencies are reviewing draft plans simultaneously, and responding with coordinated comments. The lead person could also be

responsible for identifying and elevating issues which arise among the agencies or between the agencies and the applicant.

3. The three Federal agencies could each identify one person for each state and each tribe who is responsible for supporting state efforts to integrate TMDLs and HCPs. These teams would work together to support state and tribal efforts. This person could be identified at either the staff review level or the policy level, or both.
4. Whenever NMFS or FWS receives an inquiry regarding preparation of an aquatic HCP by any party, NMFS/FWS informs EPA and the state water quality agency of the inquiry. EPA and the water quality agency review the 303(d) list and TMDL schedule and advise NMFS or FWS and the potential applicant in writing of opportunities to integrate TMDLs and the HCP.
5. The three agencies could establish a specific interagency review and elevation procedure and time line similar to that contained in the draft NMFS/EPA/FWS MOU for Section 7 consultation on water quality standards and NPDES permits.
6. For each major river basin, a basin coordination and planning group could be created that can deal specifically with local HCP, TMDL, WQMP and watershed health issues. This group can also integrate restoration and recovery efforts for the various resources being managed within a basin. For example, the framework for this group has already been described and is being pursued in the Rogue Basin. The lead person, i.e., Basin Coordinator, could also be responsible for identifying and elevating issues which arise among the agencies or between the agencies and the applicant.

Commitments and Recommendations

- #25** The three agencies commit to further evaluate these options with input from states, tribes, and other interested parties.

VI. Overarching Questions for States and Tribes

This paper identifies many issues and provides recommendations for next steps for resolving these issues. Many of these next steps include discussions with states and tribes. The three agencies anticipate that each state and tribe may see particular opportunities or barriers to CWA/ESA integration which they would like to have addressed by the Federal agencies. We have identified these overarching questions for states and tribes to consider:

1. What State law/processes are already in place that could provide additional structure for meeting these two Federal laws (e.g. a statewide watershed approach)? Are new state laws/processes desirable?
2. Does the State want to actively align TMDL program actions to pursue integration? For example, will State TMDL writers develop joint work plans with Services, and identify potential Section 10 permit holders in watershed? Does the State want to pursue this integration for every TMDL being developed or only for pilot TMDLs/watersheds? Will the State wait for landowners to come forward to begin integration efforts?
3. Does the State water quality agency or Tribe want to be a section 10 permit holder? Under what circumstances? Are there adequate regulatory authorities under State law or Tribal law to make this approach feasible?
4. Does the State/Tribe want to take the lead in convening a regular forum where interested stakeholders can discuss specific watershed plans with all Federal, state and tribal agencies to receive guidance and feedback?
5. Does the State/Tribe have a parallel effort for State/Tribe water quality agencies and State/Tribe natural resource agencies to integrate laws and procedures? Is one needed?
6. Does the Tribe want to pursue integration of the two laws through one comprehensive plan for all tribal lands or through development/participation in watershed plans that cross tribal jurisdictions? What are the Tribe's short-term and long-term plans for assuming the lead for developing TMDLs for watersheds within its jurisdiction?

Commitments and Recommendations

- #26** The three agencies commit to meeting with States, Tribes, and other interested partners to discuss these questions, seek feedback on recommendations and commitments in this paper, and decide on collaborative approach to move forward.

Table 1: Summary of Pilot Efforts to Integrate CWA/ESA in WA, OR, and CA

Pilot Project	Location	Description	Mechanism for Integration	Status (3/99)
Simpson Timber Co HCP/TMDL	Land ownership & watersheds on WA Coast (220,000 ac)	Plan includes: assessment and stratification of landscape into five "lithotopo" units; riparian conservation reserve system	HCP negotiations began prior to TMDL. TMDL being completed for stream types id'ed in HCP. HCP will contain implementation plan for TMDL.	HCP and TMDL near completion
Washington Timber Fish & Wildlife, Forestry Module	All non-federal timber lands in Washington	Stakeholder process to identify forest practices which are designed to meet needs of listed species and water quality standards	4(d) rule, precursor to HCP; CWA assurances for deferral of TMDLs for 10 years on timber lands	In negotiation
South Steens Conservation Agreement/TMDL	Southeastern Oregon	Conservation agreement between FWS, BLM, Oregon DFW and private ranch to protect unlisted fish and temperature TMDL.	TMDL uses surrogate measures for temperature that correspond with management measures in the Conservation Agreement.	Oregon DEQ has prepared the South Steens TMDL but not yet submitted it to EPA for review and approval. The Conservation Agreement is complete.
Rogue/Umpqua (Applegate and Smith watersheds)	Southwestern Oregon	Rogue Valley Council of Governments and Umpqua Basin Watershed Council are developing watershed plans in pilot watersheds to meet requirements of both laws	To be determined	plans still in assessment/scoping stages. Applegate plan is furthest along
Van Duzen River TMDL/Pacific Lumber	Northern California	HCP developed as part of "deal" to acquire Headwaters Forest. TMDLs due by 12/99. Yager creek may be pilot for ranch lands.	Processes not formally linked. Interagency technical team helps ensure consistent approaches.	HCP near completion, final TMDLs due 12/99.
Garcia River TMDL	Northern California	Garcia River TMDL established for watershed which includes ownership by three timber companies.	Data generated by one company for a draft HCP became basis of TMDL. TMDL implementation plan allows for HCPs to be submitted as site specific plans	TMDL (including implementation plan) adopted. Timber company HCPs still under negotiation.

Table 2: Clean Water Act/Endangered Species Act - Opportunities for Integration

Examples in Italics - empty cells indicate no policies or examples

		Clean Water Act							
		303(c) Water Quality Standards	303(d) Total Maximum Daily Loads	401 Water quality certification	402 NPDES Permits	402 Stormwater Permits	404 Dredge and Fill Permits	319 &CZARA Nonpoint Source Program	320 National Estuary Program
ESA	4(d) Rule Statewide/ Sector		Low priority for TMDLs for sectors with 4(d) ----- <i>Washington TFW Forestry Module</i>						
	4(d) Rule Watershed		4(d) rule recognizes TMDL & implementation plan						
	7(a)(1) coordinate on Federal actions		EPA/NMFS/FWS will share information on TMDLs					NRCS MOU on field office technical guides	
	7(a)(2) consult on Federal actions	Consultation by EPA on new or revised State standards (Draft MOA 1/99) ----- <i>Oregon, Idaho California</i>	EPA/NMFS/FWS reviewing policy to consult on TMDLs		Consultation by EPA in accordance with Draft MOA (1/99)	Consultation by EPA in accordance with Draft MOA (1/99)	Consultation by Corps ----- <i>Programmatic, WA Sonoma Co. Water Agency & Russian River, Commencement Bay, Vernal pools, CA</i>		
	10 Habitat Conservation Plan		Align HCP & TMDL ----- <i>Simpson, WA Rogue/Umpqua, OR</i>						

Table 2: Clean Water Act/Endangered Species Act - Opportunities for Integration

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		303(c) Water Quality Standards	303(d) Total Maximum Daily Loads	401 Water quality certification	402 NPDES Permits	402 Stormwater Permits	404 Dredge and Fill Permits	319 &CZARA Nonpoint Source Program	320 National Estuary Program
ESA	Recovery plans								
	Conservation Plan (candidate species)		Align Conservation Plan & TMDL – <i>South Steens, OR</i>						

Table 3: CWA/ESA Integration Approach by Watershed type

Watershed type	Characteristics	Process for Integration	Mechanism for Integration	Key Issues	Pilot examples
1. Single large landowner, TMDL driven	<ul style="list-style-type: none"> - Large landowner owns all or most of watershed (timber co. ranch, state forest, etc). - State has developed or is developing TMDL (high priority) - Cause of impairment attributable to single landowner 	<ul style="list-style-type: none"> - State, Services, EPA and landowner should collectively evaluate scope of work needed to complete HCP in addition to TMDL. 	Two legal documents prepared with one set of information and requirements.	Level of assurance may vary between two plans	Garcia River
2. Single large landowner, HCP driven	<ul style="list-style-type: none"> - Large landowner owns all or most of watershed (timber co. ranch, state forest, etc). - Landowner wants certainty under both laws - TMDL questionable or low priority for state 	<ul style="list-style-type: none"> - State, Services, EPA and landowner should collectively evaluate scope of work needed to complete TMDL in addition to HCP. - EPA may prepare TMDL for the state. 	<ul style="list-style-type: none"> - If HCP approved, then State may defer TMDL - Landowner may prepare “third party” TMDL for adoption by state as first phase, subject to adaptive management. 	State may not wish to assist with this effort due to lower priority.	Simpson Timber Co.
3. Mixed ownership; single moderate-sized landowner, multiple smaller landowners	For example, one large timber company and multiple small timber and ranching operations	HCP may drive operations on timber company land; process for small landowners may proceed on parallel track through HCP or 4(d) rule.	-TMDL should provide cumulative effects and source analysis for whole watershed.; probably will have two distinct ESA compliance plans.	<ul style="list-style-type: none"> - Equity issues between large and small landowners - Synthesis of different data, monitoring & implementation approaches 	Yager creek/PALCO

Table 3: CWA/ESA Integration Approach by Watershed type

Watershed type	Characteristics	Process for Integration	Mechanism for Integration	Key Issues	Pilot examples
4. Mixed ownership; multiple small landowners, multiple sectors	For example, small rural landowners, ranching, nonindustrial timber, suburban development	Need local watershed group, county, conservation district, or state to take lead in developing stakeholder process	Design one watershed plan that meets requirements of both laws	<ul style="list-style-type: none"> - If HCP, who holds the permit? - watershed 4(d) rule that matches TMDL may be better option. - how is the plan funded? 	Rogue/Applegate
5. Mixed ownership; multiple small landowners, single sector.	For example, all land use is agricultural; irrigated agriculture or ranching	Agricultural conservation district or local watershed group leads process	<ul style="list-style-type: none"> - Design one watershed plan that meets requirements of both laws - May want to use NRCS MOUas basis for ESA compliance 	<ul style="list-style-type: none"> - same as above - adequacy of cooperative approaches 	South Steens
6. Urban watershed	Multiple pollutant sources, mixed industrial, municipal, stormwater; may be multiple cities/counties	Cities/counties or state take lead in developing process	<ul style="list-style-type: none"> - Design one plan that meets both laws - May use stormwater permit as a vehicle 	<ul style="list-style-type: none"> - Use of local authorities/local capacity - Funding - Urban boundaries/growth issues 	

Table 4: Proposed Resolution of Critical Differences

FEATURE	HCPs	TMDLs	PROPOSED RESOLUTION
	<i>Plan Development and Scope</i>		
Responsible Party	Usually landowner or sector, may also be State agency, city or county	State prepares TMDL including implementation plan; allocations/implementation plan transfer responsibility to landowners/sectors	HCP's must be based on watershed scale assessments that match TMDLs; TMDL implementation plans must contain landowner plans or sector plans that match HCPs. Ideally, TMDLs and HCPs are initiated together; however, either can be added on to the other if one is pre-existing.
Geographic Scope	Landownership of responsible party	River reach, basin or watershed	
Deadlines for Completion	Flexible (voluntary)	Determined by State or Court	
Public Review	Public notice and comment on draft NEPA document	Public notice and comment on proposed TMDL	

Table 4: Proposed Resolution of Critical Differences

FEATURE	HCPs	TMDLs	PROPOSED RESOLUTION
	<i>Objectives</i>		
Functional Scope	Habitat of listed and proposed species; single or multiple species	303(d) listed waters bodies; single or multiple pollutants	Integrated plan should be based on a single set of indicators and targets which interpret WQS and PFC. Load allocations based on habitat surrogates that are linked to attainment of water quality criteria Explicitly incorporate antideg into TMDL and HCP for larger watershed where pristine areas are critical.
Overall Goal	Recovery and Maintenance of PFC and long-term survival of Federally listed species (i.e., Support long-term survival and contribute to or not preclude recovery)	Attain water quality standards	
Standards	Properly Functioning Conditions (PFC)	WQS & criteria; quantitative and narrative	
Protection of high/quality pristine areas	May be included	Antidegradation should protect pristine areas within impaired watersheds	

Table 4: Proposed Resolution of Critical Differences

FEATURE	HCPs	TMDLs	PROPOSED RESOLUTION
	<i>Assurances</i>		
Assurance of Effectiveness	Adaptive Management (AM), Findings at issuance of permit, or MOS	Margin of Safety (MOS)	Both TMDLs and HCPs must specify adaptive management process and review cycles must be aligned (e.g. 5 or 7 years) AM includes: milestones, monitoring, and re-opener clauses. MOS can be expressed as adaptive management process. TMDL can have extended implementation plan time frame if appropriate to problem.
Certainty	Indemnity from ESA Prosecution No Surprises Regulation	No formal mechanism	
Time frame	Variable. Corporate timber HCPs for 50+ years.	Implementation plan specifies time frame; State' discretion on frequency of TMDL review	

Table 4: Proposed Resolution of Critical Differences

FEATURE	HCPs	TMDLs	PROPOSED RESOLUTION
	<i>Implementation</i>		
Implementation Plan	Integral to the HCP	State must prepare plan; not necessarily part of TMDL	TMDL implementation plan matches HCP prescriptions/actions, and contains other required elements.
Adequacy of Plan	Minimize and mitigate to the maximum extent practicable, no Jeopardy, assurance of adequate funding, authority to implement terms of the HCP; ESA Section 10(a)(2)(A); Section 10 regulations @ FR 222.22 (b)(5)(i-v)	BMPs/actions must provide reasonable assurance that water quality standards will be attained	